

Evergreen Solar  
112 Barnum Road  
Devens, MA 01434

April 1, 2009

Attention: Craig Core, Facility Manager

RE: NOISE VIOLATION

Dear Mr. Core:

The Devens Enterprise Commission has received a number of written complaints about noise emanating from the Evergreen facility on Barnum Road in Devens. Following the procedures laid out in 974 CMR 4.05 the DEC authorized our Building Inspector to investigate these complaints. Doug Sheadel of Modeling Specialties was enlisted to assist in collecting the technical data. The investigation concludes that Evergreen is, in fact, violating the DEC's Industrial Performance Standard for noise.

Per 974 CMR 4.05 (2) (b) (see below), you have 30 days in which to respond to the complaint and begin to take actions to mitigate the violation.

2. Once there is reasonable certainty of the nuisance source, the violator shall be subject to providing reasonable mitigation measures that essentially resolve the difficulty. Refer to 974 CMR 4.05(2)(b) for a description of procedures relative to enforcement.

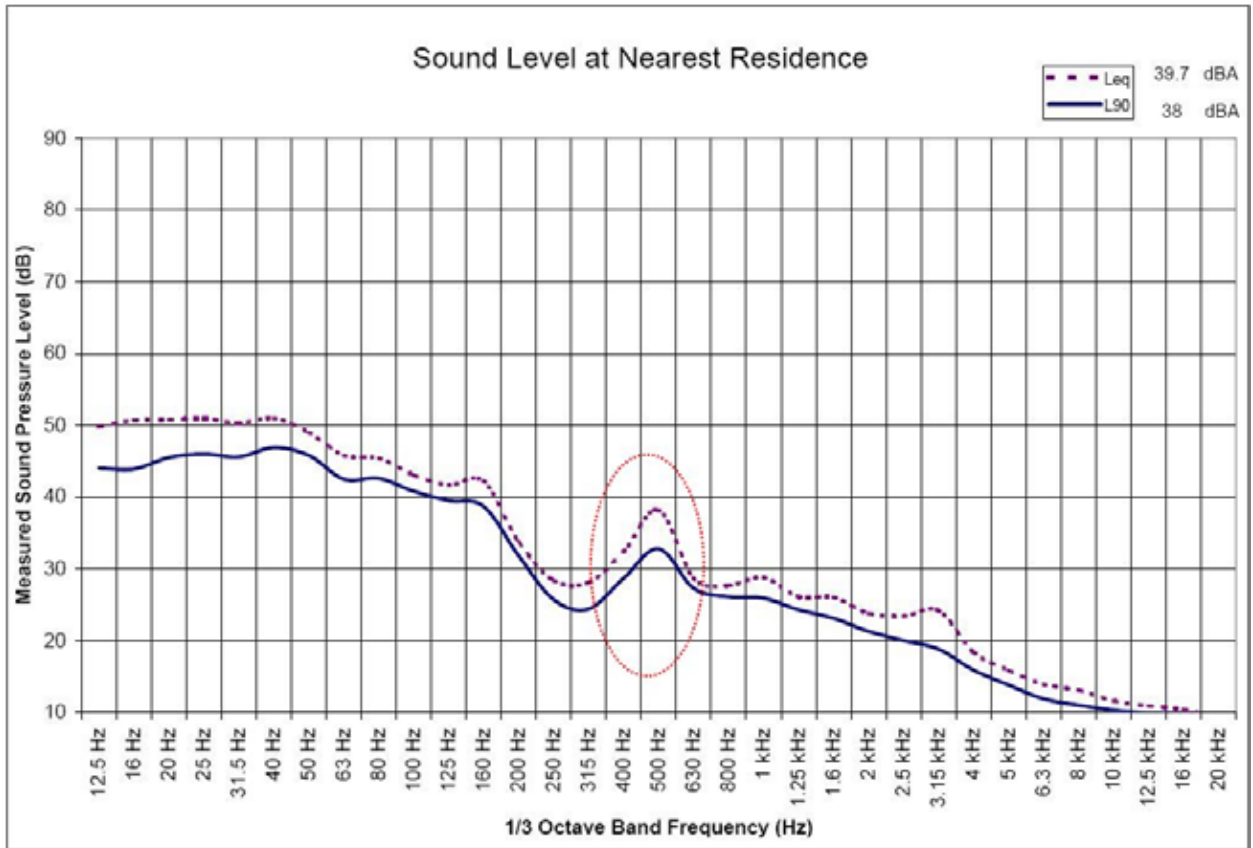
(b) Potential violators will be given thirty (30) days in which to respond to a complaint or otherwise provide reasonable confirmation to the DEC inspection official, that the problem did not exist or has been eliminated. If probable cause is determined, a second thirty (30) day time period will be granted in which to correct the interference or to demonstrate that good faith efforts have been initiated to correct the objectionable circumstances. If such efforts are not initiated, the violator may be subject to remedies in the Devens By-Laws, including levying or fines, requirements to post performance guarantees, permit reconsideration by the DEC, or legal action. Emergency nuisance conditions may, at the discretion of the DEC inspection official, require more expeditious remediation.

The detailed report of the building inspector and our consultant follows:

Preliminary sound level measurements conducted by the Devens Building Department indicated that the source exceeded the 45 dBA at the residence at 42 Old Mill Road. Based on qualitative observation of the sound character, the sound field was dominated by the sound from the Evergreen Solar equipment. In the course of several visits, the observed sound level at the residence varied from visit to visit, while the sound at the source remained the same.

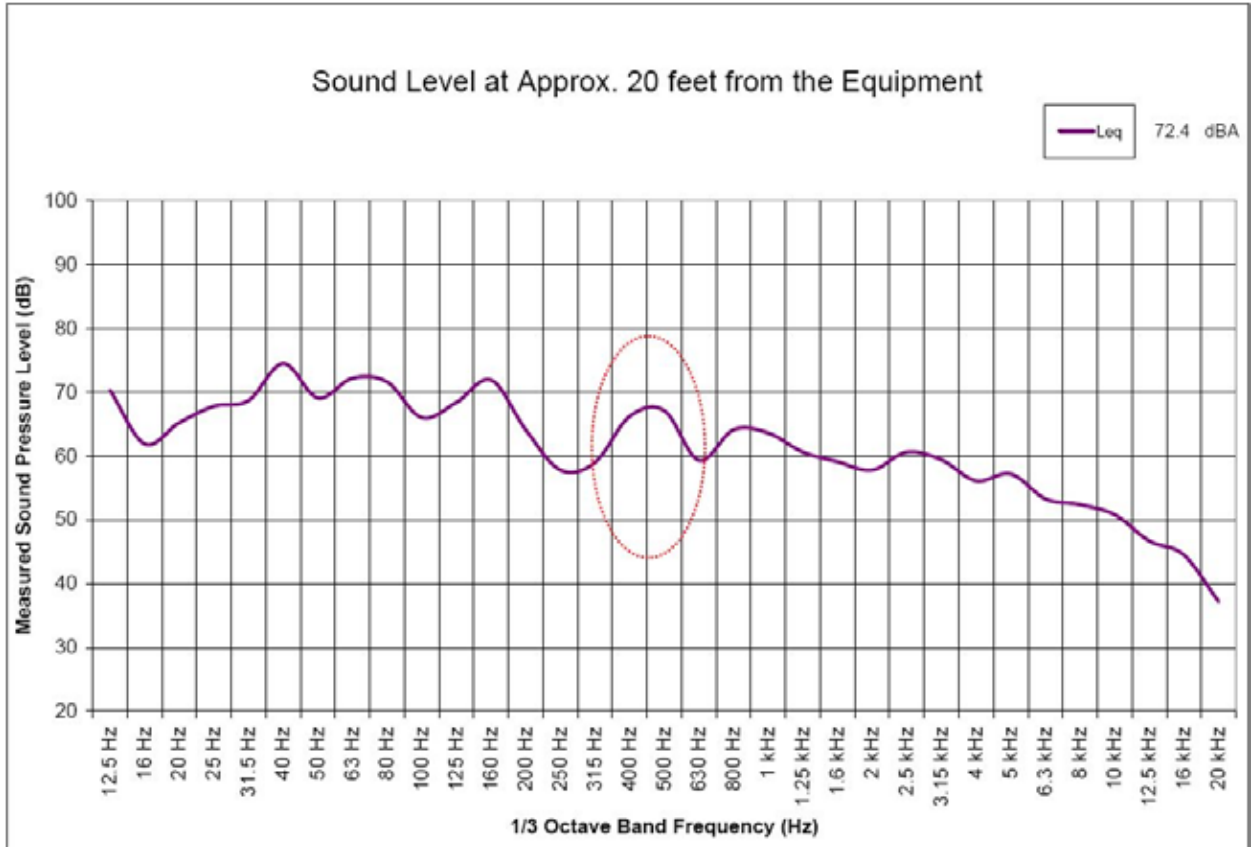
The preliminary surveys were followed by detailed measurements of the sound at both the residence and also at the suspected source. Under the conditions of the detailed measurements on the evening of March 28 and early morning of March 29, 2009, the observed equipment sound was less than the absolute compliance value of 45 dBA.

However, the sound retained its tonal character. The tone is identified in the measured spectrum shown in Figure 1.



**Figure 1:**  
**Graphical Summary of the Measured Spectrum at 42 Old Mill Road**

Another measurement was made at the rear of the Evergreen Solar facility. These measurements were made to identify the source of the offending tone to confirm that it is associated with the Evergreen Solar Facility. The dominant sound at the rear of the facility is from blowers associated with an apparent scrubber system. The graphical summary of the measured equipment spectrum confirmed the blower to be a significant source of the 50 Hz signal that is propagated into the community.



**Figure 2:**

**Graphical Summary of the Measured Spectrum at the Evergreen Solar Equipment**

As cited in your August 2007 noise analysis for the facility, there are several criteria that apply to the operation of the Evergreen Solar facility. The DEP Noise Policy limits the intrusion at the property line and nearest residence to an increase of 10 dBA in the ambient background. The DEC Noise standard limits the sound intrusion to 45 dBA at the Devens corporate boundary. Building Department measurements indicate that this criterion is frequently exceeded by the facility. Those measurements indicate that while the sound emitted from the equipment is relatively consistent, the observed residential sound depends on the conditions under which the measurements are taken. The Building Department detailed measurements reveal that even when the absolute level does not exceed the standard, the sound includes a tonal character that is subject to the DEP Noise Policy paragraph 2. The above diagnostic analysis was conducted in 1/3 octave bands to clearly identify the frequency content of the sources. In order to compare to the DEP Noise Policy, the spectrum was reduced to its full octave band form. The following spectrum corresponds to the spectrum observed at the residence in the early morning of March 29, 2009. The spectrum indicates that the tonal character that dominates the sound field is meets the DEP definition of “Pure Tone”, representing a condition of air pollution in violation of 310 CMR 7:10.

Full Octave								
31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
56	52	47	36	40	32	29	26	18

The Devens Enterprise Commission appreciates the significant contributions of Evergreen Solar, Inc. to the growth of the industrial community in the Devens Industrial Park. We strive to support a productive and profitable community within the constraints of necessary environmental boundaries. We have conducted repeated visits to your residential neighbors to resolve complaints of facility noise. We have conducted necessary analysis to confirm that it represents an environmental exceedance and is a direct result of the operation of the Evergreen Solar facility. In light of this analysis the DEC requests a general reduction of sound from the equipment and specifically the treatment of the offending tone that will reduce it order of magnitude (-10 dB) preventing it from being a future concern to the neighbors even during conditions of low ambient sound and favorable sound propagation.

Sincerely,

Peter C. Lowitt, AICP  
 Devens Land Use Administrator

Cc: DEP  
 Complainants  
 Harvard BOH  
 Ayer BOH

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